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A Brief Summary of Economic Conditions

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WITH the rate of industrial activity already by far the highest in the history of the country, more people working at nonagricultural occupations than ever before, and defense expenditures still increasing, domestic market prospects for most farm commodities continue good. For 1941 as a whole the general level of prices received by farmers may be nearly 20 percent above 1940. Most favored by price increases will be producers of meat animals . . . least favored, growers of fruits and miscellaneous crops. * * * On the other side of the ledger, rapidly rising farm wage rates and advancing costs for the things they buy are making farmers discount their gains in prices and income. Prospective income from farm marketings is the largest in 12 years, but farm wage rates and other costs also are higher. . . . And the rise in prices received as compared with prices paid has still only partially corrected the disparities of recent years. * * * The response to the Government's call for greater production of dairy and poultry products under the food-for-defense program has been favorable, but still larger gains in output are needed. . . . Feed grain and hay supplies—needed for the larger production—are plentiful, perhaps the largest in 20 years.

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Commodity Reviews

DEMAND: Good

ALTHOUGH improvement in the domestic demand for farm products since the defense program was inaugurated a little over a year ago has been fairly gradual, the cumulative effect for the entire period has been substantial. This is indicated by large increases in income from marketings and in prices received by farmers in recent months as compared with corresponding months in 1940. Since agricultural production has increased only slightly and exports have been small, it is evident that most of these rises are due to expansion in domestic demand and to new legislation affecting prices.

Industrial activity has advanced sharply since April, and is expected to average around 25 percent higher in 1941 than in 1940. The rate of activity is already by far the highest in the history of the country, more workers are employed at nonagricultural occupations than ever before, and defense expenditures are still increasing. The demands of consumers and defense needs are expected to continue to exert pressure on industrial facilities through the remainder of the year and longer.

Substantial purchases of foodstuffs under the food-for-defense program have added directly to the demand for livestock, livestock products, and some other farm commodities, and the domestic demand for some products also has been increased because of the difficulty of securing competitive imported commodities. This is particularly true of fats and oils. Higher governmental loans on 1941 crops have been anticipated in market prices of affected commodities. Taken together, these various influences plus a strong speculative and storage demand situation have resulted in marked strength in prices of farm commodities in recent months.

Industrial plants under construction since the defense program was inaugurated will come into increasing operation during the last half of the year, furnishing a market for products of other plants, but the increases in production for defense will be offset at least in part by forced reductions in output of some nonessential products because of inadequacies of materials. However, the effect of diversion of materials from consumer to defense items will be to increase the proportion of total buying power available for purchase of food and clothing, and the net result probably will be continued improvement in consumer demand for farm products.

FARM LABOR: Demand

The largest July 1 demand for farm labor since 1920 was reported by crop correspondents, but farm employment and the available supply of labor for work on farms were the lowest of record for that time of year.

Through sharp increases in farm wage rates operators are still able to secure about as many hired hands as were being used a year earlier, but the pull of improved employment opportunities among the nonagricultural occupations has resulted in a substantial decline in the number of family workers employed at farming occupations. The Agricultural Marketing Service reports that the draft on able-bodied farm men for the defense industries and the Army has been sufficient to bring old men out of retirement to again become active farm managers. It is also reported that "farmerettes" are again making an appearance.

That farmers are solving their labor difficulties without any visible effects on output is indicated by the latest

report of the Crop Reporting Board indicating probable new high records of both crop and livestock production in 1941.

PRICES: Up

The index of prices received by farmers for their products rose from 112 in mid-May to 118 in mid-June and advanced to 125 by mid-July. An improving domestic demand situation, purchases of food under the food-for-defense program, the effects of farm loan rates on prices, and strong speculative and storage demand all have contributed to these price rises. The index of prices paid by farmers has also continued to rise, but at a considerably slower rate than the gain in prices received.

Prices farmers are getting for their commodities are on the whole about one-third higher than a year ago, compared with an increase of only around 6 percent in prices paid for commodities which they purchase. As a result of this more rapid increase in prices received than in prices paid, the ratio of the former to the latter had by July increased to 97 percent of the 1910–14 average compared with 78 percent in July 1940.

Defense demands for industrial materials will compete more and more with civilian needs in the future, and price advances for the commodities farmers buy may become larger relative to gains in the prices received for

Index Numbers of Prices Received and Paid by Farmers

[1910–14=100]

Year and month	Prices received	Prices paid	Buying power of farm products [1]
1940			
July	95	122	78
August	96	122	79
September	97	122	80
October	99	122	81
November	99	122	81
December	101	123	82
1941			
January	104	123	85
February	103	123	84
March	103	124	83
April	110	124	89
May	112	125	90
June	118	126	94
July	125	129	97

[1] Ratio of prices received to prices paid.

Prices of Farm Products

Estimates of average prices received by farmers at local farm markets based on reports to the Agricultural Marketing Service. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909–July 1914	July average, 1910–14	July 1940	June 1941	July 1941	Parity price, July 1941
Cotton, lb.—cents	12.4	12.7	9.54	12.81	14.32	16.49
Corn, bu.—do	64.2	70.1	63.1	68.3	69.6	85.4
Wheat, bu.—do	88.4	86.2	61.4	83.1	85.6	117.6
Hay, ton.—dollars	11.87	11.78	7.10	7.82	7.66	15.79
Potatoes,[1] bu.—cents	69.7	81.5	82.1	64.6	76.1	92.2
Oats, bu.—do	39.9	40.9	28.3	33.3	32.7	53.1
Rice, bu.—do	81.3	(2)	75.9	113.5	110.3	108.3
Tobacco: [1]						
Maryland, type 32, lb.—do	23.0	(2)	22.0	30.0	35.0	18.6
Apples, bu.—dollars	.96	.86	1.08	1.14	.95	1.28
Beef cattle, cwt.—do	5.21	5.33	7.48	8.63	8.78	6.93
Hogs, cwt.—do	7.22	7.25	5.78	8.98	10.20	9.60
Chickens, lb.—cents	11.4	12.2	13.6	16.3	16.8	15.2
Eggs, doz.—do	21.5	16.7	16.4	23.2	25.6	[3] 25.7
Butterfat, lb.—do	26.3	23.5	25.9	35.7	36.6	[3] 32.6
Wool, lb.—do	18.3	17.5	27.9	36.5	36.3	24.3
Veal calves, cwt.—dollars	6.75	6.74	8.56	9.90	10.27	8.98
Lambs, cwt.—do	5.87	6.09	7.85	9.14	9.13	7.81

[1] Post-war base. [2] Prices not available. [3] Adjusted for seasonality.

the products they sell than in recent months. Already, farmers are contending with rapidly rising wage rates for hired labor because of the effects of military and defense demands on the labor supply. The rise in prices received by farmers to date as compared with that in prices paid has but partially corrected the disparities of recent years.

INCOME: Up

Higher farm product prices and increased marketings of several important livestock and livestock products are largely responsible for a substantial increase in farm income in recent months compared with the same months a year ago. Present prospects for crop and livestock production indicate a record volume of sales of farm products in 1941, and with an improved level of farm prices cash income from farm marketings may be as much as 10 billion dollars compared with 8,354 million dollars in 1940. The highest farm cash income of record was 14.6 billion dollars in 1919.

Not all of the estimated increase of around 1.6 billion dollars in farm cash income for 1941 will be clear gain. Farm wage rates have advanced rapidly, and there has been some increase in prices paid for commodities and services used by farmers in their agricultural operations. Furthermore, Government payments are not expected to be as large in 1941 as in 1940, when they amounted to 766 million dollars. —P. H. Bollinger.

COTTON: Prices Higher

Cotton prices recently were the highest in 11 years. The 85 percent of parity loan rate made mandatory by 1941 legislation has been the principal price-stimulating influence in the recent rise, but other price-supporting factors include a record high level of domestic consumption, a reduced acreage planted to cotton in 1941 and generally unfavorable progress of the crop.

Mill consumption of cotton for the first 11 months of the current season totaled 8.8 million bales compared with 7.2 a year earlier and an average of 6.4 for the comparable months of the 5 years 1935–39. Although business in cotton textiles recently has been restricted, large order backlogs are still on the books of producers and raw cotton consumption is expected to continue around recent record levels at least for several more months. In contrast to the large increase in domestic consumption, cotton exports during the first 11 months of the current season fell 83 percent, from approximately 6 to 1 million bales.

Despite the small acreage planted to cotton this year, it is not at all certain that total disappearance for the coming season will exceed production. Thus, if the income of cotton producers is to be maintained, Government loan and other cotton programs will continue necessary.

WHEAT: Moving

New wheat continues to move to market in volume as harvesting of the 1941 spring wheat crop progresses. With a record carry-over of old wheat —about 400 million bushels—and a total winter and spring crop estimated by the Agricultural Marketing Service on July 1 as the fifth largest on record —924 million bushels—storage facilities are causing some concern. Congestion at Kansas City became so serious around mid-July that the railroads refused to accept additional wheat for shipment for storage there.

Latest estimates place the domestic supply of wheat for the 1941–42 season at a record of 1,325 million bushels compared with 1,099 million for 1941–42. This supply apparently would meet domestic needs and leave around 675 million bushels available for export and carry-over this year—an increase of around one-quarter billion bushels compared with last season. However, with continuation of Government loans

assured by the vote of wheat growers favoring marketing quotas on the current crop, prices have moved upward in recent months.

On the basis of a comparison with wheat prices in Canada it appears that domestic growers are getting around 40 cents per bushel more for their wheat now than they would be getting if no Government programs were in effect. Prices in mid-July were still 10 to 20 cents below loan rates, resulting in a large into-storage movement of new wheat to be held against Government loan.

As a result of the large wheat crop and the substantially higher prices this year than last, farm income from wheat gives promise of being more than 50 percent larger than that from any crop since 1937.

FEED: Supplies Up

Feed grain and hay supplies for 1941–42 are expected to be much larger than average—perhaps the largest in 20 years. There will be more livestock on farms, but unsealed supplies of feed grains per grain-consuming animal unit will be above the 1928–32 average.

Higher livestock prices resulting in part from the food-for-defense buying program have induced increased livestock feeding. As a consequence, the disappearance of feed grains during the second quarter of 1941 was larger than a year earlier. Prices of livestock and livestock products in relation to feed prices have been more favorable to heavy feeding operations since the announcement of the policy of encouraging increased food production. Industrial demand for corn is increasing.

CATTLE: Marketings Up

Commercial cattle slaughter in May and June 1941 was larger than for any previous corresponding months, reflecting in part a heavy movement of grain-fed steers and heifers. This may reduce somewhat the expected large increase of well-finished cattle during late summer and early fall. Marketings of grass-fed cattle will increase seasonally during the next few months, however, and total supplies of slaughter cattle will continue larger than a year earlier.

Cattle prices so far in 1941 have averaged above a year earlier despite the record production of beef and veal. Improved consumer demand for meats has more than offset the effect on prices of the increase in slaughter. Although further improvement in consumer demand is anticipated, supplies of well-finished cattle will continue large during the next few months, and prices of such cattle are not expected to advance as sharply as they did in the last half of 1940.

Prices of feeder cattle and cattle of lower grades and lighter weights in recent weeks have been high compared with the usual relationship to prices of heavy well-finished steers. For instance, prices of heavy beef steers at Chicago in mid-July were only a few cents higher than a year earlier, whereas cow and heifer prices were up about $1 and beef and sausage bulls about $2. Good and choice grade steers weighing over 1,100 pounds were selling in mid-July at prices 50 to 75 cents below those for lighter weight steers of comparable quality, whereas a year before the price advantage was in favor of the heavy steers.

HOGS: Increase Started

The downward trend in hog production which began in 1940 has been halted. Whereas earlier indications were for a reduction of 10 to 15 percent in the 1941 spring pig crop, changed conditions caused farmers to alter their plans so that about as many pigs were farrowed this spring as last. The fall crop probably will increase substantially compared with that of 1940. Tentatively it is estimated that 4 to 5 percent more pigs

will be saved from the spring and fall crops of 1941 than were saved in 1940.

Although hog slaughter in the 1941–42 (October–September) season may total approximately 50 million head—about 5 percent more than in each of the 2 preceding marketing years—prices are expected to average higher, as the effect on prices of the prospective increase in supplies will be more than offset by improvement in consumer demand. Since the increase in hog marketings compared with those of a year earlier will be an outgrowth of the expected larger fall pig crop, the largest year to year gains in prices may be secured during the first half of the current marketing season (October–March) when slaughter supplies are likely to be slightly smaller than in corresponding months of the 1940–41 season.

Government purchases of pork and lard under the food-for-defense program continue as an important factor in the price situation. The Government is committed to the support of hog prices at least until the middle of 1943, although purchases will vary with market conditions and food-for-defense needs.

LAMBS: Large Crop

With weather and feed conditions exceptionally favorable last spring, the 1941 lamb crop turned out to be about 5 percent larger than that of 1940, according to AMS reports. Slaughter supplies during the grass lamb marketing season (May-November) probably will be a little larger than supplies a year earlier. Marketings of sheep and lambs will increase seasonally during the next few months as new-crop lambs are sold.

So far in the new lamb marketing season prices have declined less than in the corresponding period last year. The smaller seasonal recession in prices apparently is the result of a considerable improvement in consumer demand and practically no change in the volume of lamb marketings. The expected further improvement in consumer demand and higher wool prices than in 1940 will continue as strong price-supporting factors this summer and fall, and lamb prices probably will average higher than a year earlier.

WOOL: Consumption Up

Mill consumption of wool in the United States has been at record levels in recent months and imports of apparel wool also have been the largest in at least 20 years. The record demand for wool has resulted in the best prices to farmers in more than 10 years. Although indications are that mill consumption will continue large during the remainder of 1941, most mills are reported to have already purchased their needs for several months, and no material change in the domestic wool price situation is expected during the next few months. The major part of the 1941 clip has already been sold by domestic producers.

The record consumption of wool in recent months has been due in large measure to military requirements, although improved domestic consumer demand has been an important contributing factor. As long as the military forces are maintained at present expanded levels or increased further, Government demand for wool will continue an important market influence. Government wool needs for the 1941–42 fiscal year, without any further increase in the authorized strength of the Army, have been officially estimated at 259 million pounds compared with 244 million in 1940–41.

FATS AND OILS: Production Up

The 1941 production of fats and oils as a whole is expected to exceed slightly the record output of 1940. Although recent reports suggest somewhat smaller production of cottonseed and peanuts, there was a large carry-

over of 1940 crop oilseeds on January 1, and total vegetable-oil production probably will be larger than in 1940. Butter and tallow production also will be larger. These increases will more than offset expected moderate reductions in output of lard and greases. Outputs of oilseeds and oils in 1941, however, are likely to be reduced at least as much as domestic production is increased.

As a result of improved consumer demand, Government purchases of lard and dairy products, rising ocean shipping costs, reduced imports, and forward buying by dealers and large consumers, prices of fats and oils advanced sharply during the first half of 1941, with some items doubling in price. There were only moderate price gains for oilseeds and oilcake meal until late June, since when fairly substantial advances have been made. Although the immediate outlook is uncertain, further price gains are in prospect over the longer term.

DAIRY: Record

Milk production has recently been at record levels compared with corresponding periods of any previous year. Production per cow on July 1 was about the same as in 1940, but the number of cows being milked was larger. Still larger gains in output will be needed to supply the expanded markets visualized in April when the Department of Agriculture announced plans for encouraging increased milk production.

The butterfat-feed ratio in early summer was the second most favorable on record and is expected to continue more favorable than last year during most of 1941. Feed supplies are plentiful.

Production of manufactured dairy products in recent months, and cold storage holdings of butter and cheese on July 1 were much larger this year than last. However, the increases in consumer demand and in food-for-defense buying by the Government have more than offset the effect on prices of increased production and large stocks. Prices of all dairy products are expected to continue much higher than a year earlier during the remainder of 1941.

FRUITS: More

Supplies of fruit in the 1941–42 season will be somewhat larger than in the preceeding season. The increase in the amount available for domestic consumption will also be larger since exports will continue to represent a very small part of total marketings. The price effects of the increased supply for domestic use will be at least partly offset by increased consumer demand and returns to growers probably will increase.

In California the peach crop is indicated to be 9 percent smaller than in 1940, but outside of California an increase of 48 percent is in prospect. Pear production is estimated at 14 percent above average, although 2 percent below 1940. There is a relatively large carry-over of canned pears, but the increase in consumer purchasing power and a shorter peach crop for canning probably will result in some increase in prices to growers. This will affect particularly the returns in the Pacific Coast States where about 61 percent of the 1941 pear crop will be produced.

The condition of apples in commercial areas on July 1 was reported by the Agricultural Marketing Service as 65 percent of normal compared with 62 percent a year earlier. The California valencia orange crop, for market during the summer, is estimated about 3 percent smaller than in 1940. Orange prices have risen recently, recovering to about where they were a year ago. The rise is associated with reduced competition from midseason oranges.

TRUCK CROPS: Higher

Vegetable prices are higher than they were a year ago, reflecting a much higher consumer purchasing power and

a moderate reduction in supplies. The trend of prices generally has been downward since June, as is usual when supplies from important areas in the northern States are increasing. However, prices are expected to continue to average higher than in corresponding periods of last year.

The production of truck crops has been increasing over a period of years and growers attempted to expand production this season, but unfavorable weather has prevented. The acreage harvested by mid-July was about 2 percent larger this year than last, but production had fallen 4 percent. The acreage of truck crops remaining for fresh market is estimated at 1 percent larger this season, with substantial reductions in all major groups of States except the Western.

Small stocks of canned vegetables, increased consumer purchases, expansion in Army and Navy buying, and the food-for-defense program (calling among other things for a 50-percent increase in the tomato pack) caused canners to contract for increased acreages of truck crops this season. Prices generally have advanced. Supplies apparently will be in line with requirements of the food-for-defense program except for the tomato crop, which may fall considerably short.

POTATOES: Higher

Reduced supplies of late potatoes are in prospect, and since consumer demand has improved considerably this probably will result in materially higher prices to producers this fall and winter than were received for late potatoes in 1940. However, potato prices usually decline seasonally until August or September. Potatoes from the intermediate crop available for immediate marketing are about 7 percent fewer this summer than last, and as a result prices are averaging somewhat higher. The indicated reduction in the supply for market from this summer through next winter is even larger compared with that of 1940, and the supply is less than the average for the 1930–39 period.

Sweetpotato production is expected to total 71 million bushels—9 million more than in 1940 but 2 million less than the average of the previous 10 years. Prices have been high recently compared to those of earlier years, but when new crop potatoes begin to move in volume there may well be some narrowing of the year-to-year price gains. Nevertheless, the substantial improvement in consumer buying power and higher prices of most other food products should result in a considerable increase in returns to growers.

POULTRY AND EGGS: More

Farmers are holding back hens in order to take advantage of the relatively high egg prices, but they are selling more young stock this year than last and at better prices.

Better consumer demand is a big factor in both the poultry and egg situation. Recent heavy food-for-defense purchases also have been a strong market influence on eggs. With total egg production expected to be about the same this summer as last, the improved demand conditions will hold prices materially above those of 1940. By fall and winter, egg production is expected to increase to a new record, but the improved demand situation probably will more than offset effects of increased production, and prices are expected to hold well above 1940 throughout the year.

Prices of eggs and poultry continue high in relation to feed costs. During the week ended August 2 about 2.5 dozen (32 percent) fewer eggs were needed to buy 100 pounds of poultry feed than were needed a year earlier. The feed-egg ratio is expected to continue more favorable than a year earlier during the remainder of 1941.

Food Prices and Factory Wages

FOOD prices, always a subject of interest, take on added interest during the course of changes stimulated by war. Low-income consumers don't want to see higher prices. Organized labor, knowing that in past war periods food prices and living costs have risen, seeks higher wages in protection against actual or anticipated price advances. Farmers want higher prices because of increased costs and because it is chiefly through higher prices rather than increased volume that they can maintain their share of a rising national income. Others look upon rising food prices as a dangerous beginning of general price inflation.

While there have been a few spectacular changes in food prices since the present war began nearly 2 years ago, food prices in general have not yet reached a point where they represent inflationary difficulties. During June 1941, retail food prices averaged 80 percent of prices in 1929 compared with 74 percent in June 1940, and 75–77 percent during the years 1938–39–40. In July 1941 food prices were 1 percent higher than in June. These price changes cover the cost of a standard food budget for factory workers as computed by the Bureau of Labor Statistics. It is therefore pertinent to compare these price changes with the wage earnings of factory workers. Such a comparison appears in table 1.

DURING the first 6 months of 1941, average factory wage earnings at an annual rate of $1,372 per employed worker, $192 more than the annual rate for the first 6 months of 1940 and $70 greater than the average earnings of factory workers employed in 1929. During this 12-year interval, hours of work have been reduced and rates of pay per hour have increased, with the result that the 1941 earnings are approximately 5 percent above those in 1929. Obviously, with earnings somewhat above those of 1929, and food prices 21 percent below those of 1929, the purchasing power of factory pay rolls per employed worker in exchange for food is substantially greater than in 1929—about one-third greater.

TABLE 1.—Food and Nonfood Living Costs and Earnings Per Employed Factory Worker

[Index columns: 1929=100]

	Factory worker's earnings per worker		Retail value of 58 foods		Earnings available for nonfood items		Index of nonfood living costs
1929	$1,302	100.0	$415	100.0	$887	100.0	100.0
1930	1,209	92.9	391	94.2	818	92.2	98.6
1931	1,086	83.4	322	77.6	764	86.1	94.5
1932	879	67.5	270	65.1	609	68.7	87.7
1933	854	65.6	264	63.6	590	66.5	82.5
1934	941	72.3	295	71.1	646	72.8	82.1
1935	1,015	78.0	331	79.8	684	77.1	82.2
1936	1,083	83.2	342	82.4	741	83.5	83.1
1937	1,179	90.6	353	85.1	826	93.1	86.1
1938	1,079	82.9	321	77.3	758	85.5	86.9
1939	1,153	88.6	311	74.9	842	94.9	86.2
1940	1,226	94.2	314	75.7	912	102.8	86.5
January–June 1940 [1]	1,180	90.6	314	75.7	866	97.6	86.4
January–June 1941 [1]	1,372	105.4	327	78.8	1,045	117.8	87.4

[1] Total for year at January–June rate.

Factory worker's earnings per worker derived from U. S. Bureau of Labor Statistics factory employment and pay roll data.

Index of nonfood living costs derived from cost of living indexes of the B. L. S. Retail value of 58 foods computed by the Bureau of Agricultural Economics from retail food prices of the Bureau of Labor Statistics

Another way of looking at food prices in relation to earnings is to deduct from current earnings the cost of the standard food budget, so as to see more clearly what is happening to the average standard of living in terms of nonfood items. At prices prevailing during the first 6 months of this year, the annual food budget cost $327 compared with $314 in 1940. While this is only a $13 or a 4 percent increase over the past year, it is a reduction of $88 from the cost of the annual food bill in 1929. In 1929, after paying $415 for food, the average factory worker had left $887.

On the basis of average earnings so far in 1941, after deducting $327 as the present annual cost for the same quantity of food, the average factory worker has left $1,045, which he may spend for other items in his cost of living budget or which he may spend for more food or more expensive food. The amount of money thus left over for nonfood items is approximately 18 percent greater than the amount left over in 1929; and inasmuch as prices of nonfood items in living costs so far this year have averaged 87 percent of the prices in 1929, the average employed worker so far this year has been able to buy 35 percent more in the way of goods and services other than food than did the employed worker in 1929.

Still another way of looking at these figures is that the annual retail cost of the standard food basket of 58 items amounting to $327 represents only about 24 percent of the annual wages per employed worker, whereas the 1929 cost of the same quantity of food represented 32 percent of annual wages. The farmer's share in the consumer's food dollar is now less than it was in 1929. The relatively lower farm prices contribute about half of this saving in food costs (the reduction of $88 from the 1929 food bill) and lower distribution costs in general contribute the other half.

Table 2.—Per Capita Incomes of Nonagricultural Workers, 1929, 1940, and 1941

(a) INCOME PER WORKER

	Dollars				Percent of 1929		
	1929	1940	January–June [1]		1940	January–June [1]	
			1940	1941		1940	1941
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Percent*	*Percent*	*Percent*
Manufacturing	1,302	1,226	1,180	1,372	94.2	90.6	105.4
Mining	1,430	1,270	1,254	1,379	88.8	87.7	96.5
Trade	1,342	1,203	1,196	1,238	89.6	89.1	92.3
Transportation, utilities, and communications	1,643	1,837	1,829	1,869	111.8	111.3	113.8
Service	964	838	835	855	87.0	86.6	88.7
Government (excluding military)	1,728	1,853	1,824	1,827	107.2	105.6	105.7
Total	1,372	1,306	1,280	1,396	95.2	93.3	101.7

(b) AVAILABLE FOR NONFOOD ITEMS [2]

Manufacturing	887	912	866	1,045	102.8	97.6	117.8
Mining	1,015	956	940	1,052	94.2	92.6	103.6
Trade	927	889	882	911	95.9	95.1	98.3
Transportation, utilities, and communications	1,228	1,523	1,515	1,542	124.0	123.4	125.6
Service	549	524	520	528	95.4	94.9	96.2
Government (excluding military)	1,313	1,539	1,510	1,500	117.2	115.0	114.2
Total	957	992	966	1,069	103.7	100.9	111.7

[1] Total for year at January–June rate.
[2] After deducting these food costs: $415 for 1929, $314 for 1940, $314 and $327, respectively, for January–June 1940 and 1941.

COMPARISONS similar to the foregoing cannot readily be made for other groups or for the entire nonagricultural population since the available indexes of living costs apply only to factory workers. These workers now total around 10 million, but they represent only about one-fourth of all nonagricultural employed persons, many of whom live on budgets quite different from that of the average factory worker, because their annual earnings are either smaller or greater than average factory wage earnings.

During the first 6 months of 1941, when average factory pay rolls per employed worker were at an annual rate of $1,372, those engaged in service trades earned at a rate of $855, those engaged in wholesale and retail trades $1,238, in mining $1,379, in transportation, communication, and utilities $1,869, and in government service (excluding military) $1,827. All of these groups combined earned at an average rate of $1,396 in the first 6 months of 1941 compared with $1,280 in 1940 and $1,372 in 1929.

In general, the effect of recovery since 1932 and the defense program so far has been to restore wage earnings of industrial workers and the money income of the whole nonagricultural employed population to about the 1929 level. But it should be noted that there are still several million persons out of work, partly employed or employed on government relief work who have yet to share fully in this improved situation.

If for each of the six groups mentioned above we allow retail food costs equal to those of the average factory worker and compare the balance with that of last year, we find a substantial rise of 21 percent in income available for nonfoods among the factory workers, and small gains of 1 to 3 percent among the other groups, with no change among government employees. For all nonagricultural workers, there is shown an average improvement in nonfood income of about 11 percent over last year, and about 12 percent over 1929.

FROM the standpoint of a balanced price structure, food prices are still relatively low, as they have been ever since 1929, and in fact ever since the 1920–21 price collapse after World War I. But taking 1929 as a base, food prices during the first 6 months of 1941 were 79 percent and nonfood items 87 percent. Food prices, to have been in line with nonfood prices, needed to be about 11 percent higher. This suggests two observations: One, that such a price rise, if unaccompanied by advances in nonagricultural prices and wages, would have contributed toward a better balance between farm and nonfarm income without involving the danger of price inflation. Two, that with a national food bill of about 16 billion dollars for domestically produced farm products, the nation as a whole was getting its food for nearly 1¾ billion dollars less than it would have paid if 1929 price relationships prevailed, and that about half of this "saving" was "contributed" by farmers and the remainder by those engaged in food distribution.

The "disparity" between retail food prices in general and prices of nonfood living cost items was reduced only slightly during July, by a 1-percent rise in food prices and a smaller rise in nonfood.

With per capita incomes of most wage-earning groups restored to their 1929 levels or better, and with present food prices about 20 percent below those of 1929 and about 10 percent below nonfood prices, there would appear to be room for some further but selective rise in food prices; the real problem is how to close this disparity without running the danger of an increase beyond the point that would represent price inflation.

LOUIS H. BEAN.

Crop Insurance for 1942

A SHARPLY different plan for payment of premiums has been woven into the 1942 crop insurance program. The change, involving a commodity note, is expected to encourage greater participation in the program and, at the same time, effect a saving of about $1,000,000 annually to the Federal Crop Insurance Corporation in the storage and handling of grain.

By signing the commodity note, which is a part of the insurance application, the grower is not required to pay his premium immediately in wheat or the cash equivalent as in former years. When the grower signs the note he promises to pay his premium in wheat or the cash equivalent on or before maturity. Maturity dates of the notes will vary from State to State. In general, these dates will correspond to the approximate time that the crop usually is harvested.

The signed note also stipulates that if the insured grower does not pay his premium on or before maturity, the Corporation is authorized to deduct the amount of the premium from any indemnity he might receive, or from the first Government payment the grower receives. When payment of the note is made by any one of these methods, the amount of the premium is figured in the cash equivalent on the basis of the current market price of the date of maturity. If the note is paid on or before maturity the grower may pay either in actual wheat or the cash equivalent as of the day he elects to make payment.

ABOUT 95 percent of all premiums under the 1941 insurance program were paid through assignment of the farmers' AAA payments. It is expected, therefore, that the majority of growers will elect this year to pay their insurance cost with deductions from Government payments. Thus, except for the very few farmers who will pay their premiums with actual wheat on or before maturity, the Corporation expects to carry little actual wheat in storage. In former years, the Corporation has carried in storage wheat amounting to from 6,680,000 to 14,360,000 bushels. By setting maturity dates for the notes at harvest time or about the time indemnities are generally paid in each State or region, it is expected that premium collections and indemnity payments will be consummated almost simultaneously in most instances, thereby minimizing the volume of wheat that the Corporation will have to store.

The commodity note, which, incidentally, also will apply to the cotton insurance program, has another advantage for the farmer. Because of the requirement that all insurance applications must be signed before seeding and before specified dates (August 30 for winter wheat and February 28 for spring wheat) many farmers in the past have not been able to complete their farm plans for the coming crop year by the closing dates. This was especially true of tenants and sharecroppers, many of whom had not completed leasing arrangements by the time the application dates expired. The result was that many farmers who desired insurance were unable to obtain this all-risk protection against all unavoidable hazards. With the note plan, however, growers may sign the note any time on or before the expiration of the application period and the insurance will apply to all farms that the individual operates.

This arrangement also works to the advantage of the Corporation in that it reduces selection of risks that formerly operated to the program's disadvantage. In the past, a grower could select those farms which he wanted to insure. He might insure the high risk farm and not insure the low risk farm

Under the note plan, however, he must insure all farms which he operates or on which he has an interest in the wheat crop if they are in the same county. At the same time, this requirement eliminates the need for the insured farmer to sign separate applications for each farm as he did in the past. One application, one note, apply to all farms, thus making the writing of crop insurance a more simplified process and causing the farmer less bother and trouble.

A CHANGE in the 1942 program, designed particularly for the Pacific Northwest wheat States, extends the time in which the insurance is in effect. Under the 1941 insurance plan, the protection covered the crop up to October 1. For 1942 this time has been extended to October 31.

As harvesting preparations reached completion in the bulk of the winter wheat States the outlook for an encouraging result of the 1941 program and for a larger signup for 1942 was generally evident. More than 420,000 contracts were written on the 1941 crop.

The Corporation believes that a combination of factors—the ease with which growers may insure their farms, the commodity note plan, and the price situation—will tend toward inducing a larger signup next year. Increases in participation during the first years of crop insurance were achieved when wheat prices were low. Now the Commodity Credit Corporation loan program and higher parity prices have served to bolster wheat income at a considerably higher level so that wheat has become a more valuable commodity. Crop insurance to protect this cash crop has become increasingly important.

In 1941, the Corporation included in its rate structure the 1939 production and loss records. For 1942, the data for 1940 have been blended into the actuarial structure. In this way the Corporation is constantly improving the accuracy of its yield and rate structure, working for greater refinements and adjustments between the degree of risk as reflected in premiums and the degree of protection as reflected in yields.

LEROY K. SMITH,
Federal Crop Insurance Corporation.

Progress in Cooperation

THE cooperative associations active in 1913, the first year for which national statistics are available, were small local enterprises serving a limited area. With few exceptions they were concerned with converting milk into butter and cheese, receiving grain and loading cars, assembling and shipping livestock, collecting wool in lots large enough to attract buyers, and operating packing houses for fruits and nuts. A few cooperatives in the South operated cotton warehouses, and egg circles were beginning to appear.

Today the cooperative pattern is more complex. The trend has been from the small local association to the larger regional or federated types of cooperatives. As late as 1920 small associations were handling the greater part of the cooperative business. Today there are some 50 federations, more than 100 large-scale centralized organizations, about as many sales and purchasing agencies operating on terminal markets, and nearly 200 bargaining associations.

Farmers' cooperative marketing, purchasing, and service cooperatives thus are in a sounder position today and have a wider field of opportunities than ever before. Yet at this time

cooperatives face the need for meeting effectively the changes and realignments which the defense program is making necessary. What are the successful cooperatives doing to keep in stride with today's defense tempo?

FOR one thing, in many fields they are maintaining their leadership in marketing, processing, and selling. One large cooperative, for example, developed the X-ray method of inspecting fruit which reveals defects hidden from old inspection methods. An olive cooperative perfected a machine which pits ripe olives at the rate of 750 to 1,000 a minute. It has enabled the association to lead the way in putting out a commercial pack.

Another cooperative which employs highly trained engineers developed a walnut-cracking machine which saves the association an average of approximately $350,000 a season. A Michigan cooperative employs a battery of 120 electric eyes which, with unerring skill, sorted almost 10 million pounds of beans in a 4-month period with the help of only two or three persons to inspect and adjust the equipment. A machine which does a superior job of protecting eggs with a thin coat of oil has been devised by a poultry and egg cooperative. Several egg-marketing associations retard oxidation in the eggs by substituting carbon dioxide for the air inside the eggshell.

All-metal churns with capacities up to 2,500 pounds of butter, which a California cooperative developed, knead the cream into a firm butter having a composition with a minimum of variation. These churns can be cleaned with live steam or boiling water without danger from splinters, warping, or unsanitary cracks.

Among the accomplishments of one of the largest of the cooperative association laboratories is the discovery of certain basic processes which made possible the pectin industry. Pectin now is widely used in the confectionery, pharmaceutical, and medical fields.

Numerous cooperatives have become more useful to their members by the addition of supplemental services. Cotton gins have built refrigerated food lockers, added supplies, and cotton storage facilities; cooperative oil associations have taken on the purchasing of other supplies for their members; elevators keep busy in their "off" seasons with purchasing activities; other associations market a wider variety of products than they formerly handled.

Cooperatives generally recognize that they not only have the opportunity of serving their members, but also of providing definite assistance to all farmers by increasing efficiency, improving service, and lowering margins, thus making it necessary for private enterprises to approach the cooperatives' standards of operations. On the other hand, the existence of progressive private enterprises keeps the cooperatives on their toes and thereby helps to maintain their standards at a high level.

THE opening of the first farm bureau oil refinery in the United States in the spring of 1940 atMount Vernon, Ind., marked a new step in cooperation. Another step was taken in September 1940, when the National Farm Machinery Cooperative, Inc. began assembling co-op tractors in its own plant at Shelbyville, Ind. This is a joint program of the Indiana Farm Bureau Cooperative Association, the Michigan Farm Bureau Services, the Ohio Farm Bureau Cooperative Association, and the Farmers Union Central Exchange of St. Paul.

Consolidations are being effected among creamery cooperatives; and local grain cooperatives in which control has passed to nonproducers are being reorganized along strictly cooperative lines. Many associations have adopted a revolving capital plan which not only tends to place the associations in a stronger operating position but also retains control of the

cooperatives in the hands of active producer members.

Realizing that future members of cooperatives will come from the young people now in school, many cooperatives sponsor tours of their plants and discussions of the cooperative way of doing business. They also conduct training schools for employees and prospective employees. The Farm Credit Administration has assisted by providing a series of publications on farmers' cooperatives, now widely used by teachers and students of vocational agriculture, 4–H Club members, Future Farmers, and farmers themselves. Likewise, cooperatives are paying more attention to the training of personnel and to membership education.

PERHAPS the most significant current trend in the cooperative picture is the steady increase in cooperative purchasing. In 1913, purchasing associations constituted less than 4 percent of all cooperatives for which information was obtained. Now this group accounts for nearly one-fourth of all cooperatives.

Cooperatives also are making extensive use of the credit facilities of the Central Bank and the 12 district banks for cooperatives established in 1933. During 1940 the banks made loans totaling more than $101,000,000, and from the date of organization to July 1, 1941, made cash advances on loans of approximately $654,000,000. In addition, under the Commodity Credit Corporation's lending programs for 1939–40 and 1940–41, they purchased Commodity Credit Corporation paper from cooperative associations totaling approximately $30,000,000.

Twenty-five years ago total membership in farmers' cooperatives was less than 700,000. From 1915 to 1925 membership more than quadrupled. It reached a high point of an estimated 3,660,000 in 1935–36. It is now placed at 3,200,000. Volume of business done has exceeded 1 billion dollars a year since 1921, and in more than half the years since then has totaled more than 2 billion dollars.

The present ranking of the several cooperative groups as determined by dollar volume of business is: dairy products; grain; purchasing; livestock; fruits, vegetables, and nuts; cotton and cotton products; poultry and eggs; tobacco; wool and mohair.

The 10 leading States in the amount of business transacted are California, Illinois, Minnesota, New York, Iowa, Wisconsin, Ohio, Michigan, Washington, and Texas.

GEORGE H. THOMSON,
Farm Credit Administration.

Farm Products: Producer to Consumer

IV. Processing

THE basic processes by which the raw products of the farm are made usable—such as grinding, baking, churning, curing, and preserving—have been known and used for thousands of years. Nevertheless, during the last 75 years food processing has undergone changes and improvements as striking as those which have come in other parts of our industrial system. Many of the tasks of food preparation have been transferred from the kitchen to factories where mechanization and mass-production techniques could be applied.

Within the lifetime of people now living, such vastly important developments as artificial refrigeration, milk pasteurization, and the preservation of food in air-sealed containers have been brought into general use. New techniques of food processing have been developed, and many different kinds and forms of food are now con-

sumed which were unknown to our grandparents. All of this has naturally affected the economic organization of our food industries, our food habits, and our general mode of living. The added functions and services which our food industries now perform explain in part the increase in the price-spread between farmer and consumer.

A typical example of the evolution in food processing is the shift of bread baking from the household kitchen to the modern large-scale bakery. First came the small local or neighborhood bakery, catering direct to nearby consumers. As cities and towns increased in population the output of some bakeries expanded and these larger concerns found that they could distribute their product to consumers more effectively through retail stores handling other foods than by selling direct. Then more recently came consolidations into large-scale organizations operating branch plants on a regional or Nation-wide basis. This shift from small- to large-scale units was facilitated by the increased use of machines for performing the various operations required in making and handling the products, and with it came many changes in the variety and kinds of products manufactured. Probably no operation in the baking industry as now performed shows greater contrast with the methods of a few decades ago than the procedure followed to insure sanitary handling of the products. Wrapping each loaf of bread in waxed paper is a fairly recent innovation, and still more recent is the practice of supplying consumers with bread sliced by machines ready for serving.

CANNING and preserving are food-processing methods which have been developed into large commercial industries especially important to agriculture. The growth of these industries together with the improvements in artificial refrigeration and in high speed transportation have made possible the fruit and vegetable industry as it exists today. Commercial canning had its beginning more than a century ago but the industry made little growth until after 1870. Although expansion was rapid between 1870 and 1900 the most outstanding developments have taken place within the last three decades. Enactment of pure food laws to prohibit product adulteration, improvements in processing technique, particularly in the field of mechanical operation, and the opening of new areas of fruit and vegetable production have all contributed to the growth of the canned and preserved food industries.

In the last three decades the per capita consumption of canned fruits has increased almost fivefold and that of canned vegetables and dried fruits has doubled. Particularly outstanding has been the increase in the quantities of fruit juice produced and consumed. The fruit-juice industry is of comparatively recent origin. It began with efforts to divert part of the expanded production of certain fruits, particularly citrus fruits, from the fresh market to other uses so as to avoid market demoralization. Consumers readily accepted the new product; and with demand increasing and fruit production expanding, the juice industry has increased its output at a tremendous rate.

IMPROVEMENTS in processing technique have resulted in many changes in the meat industry. These are reflected not only in the products sold but in the methods of handling and in the types of agencies engaged in the industry. Artificial refrigeration has been a major factor in shaping this industry's development; consequently, every improvement in refrigeration has had some effect on the meat business. The introduction of refrigerator cars about 1870 made it possible to conduct cattle and sheep slaughtering operations in the Middle West, near the center of livestock pro-

duction, and eliminated the need of shipping animals to the eastern seaboard for slaughter. More recent improvements in refrigeration have made possible the use of motortrucks in transporting meats over wide areas and have greatly reduced the seasonal fluctuations in meat-curing operations. Likewise, better refrigerating facilities for retail stores have made it possible to provide the consumer with a greater variety of meats and meat products throughout the year.

Other changes in processing techniques in the meat industry which have resulted in changes in marketing are those in methods of curing and in the kinds and varieties of products manufactured. Early curing methods were restricted largely to the use of strong solutions of brine or to the application of liberal quantities of dry salt to the meat to be cured. When ready for use the product often was so salty as to be unpalatable. With the methods now used cured meats generally have a milder and more agreeable flavor than those formerly sold and seldom show evidence of excessive saltiness.

Consumers are now supplied greater varieties of special meat products, including various kinds of sausage, meat loaves, and canned meats. Sausage production in the last 40 years has increased at a much greater rate than either population or total production of all meats.

IMPORTANT changes in processing technique have taken place in flour milling. For many hundreds of years flour was made by crushing grain between two stones by a revolving motion of the upper one. Separation of the flour from the bran was done with crude sieves. Gradually, improvements were made and the capacity of the mill unit was increased, first by the use of water power and later with steam. But until late in the 19th century the basic principles of milling were not greatly different from those 2,000 years earlier. Then came the method of crushing grain between steel rollers instead of between revolving discs or stones which not only greatly increased the capacity but also reduced the cost of grinding. This development meant the practical elimination of the small gristmills which were to be found in almost every community and centralized and relocated the milling industry.

Another important improvement in milling technique was in the method of separating flour from bran by the use of air currents instead of sieves. This discovery about 1875 made it possible for the first time to manufacture flour from spring wheat comparable in quality with that from winter wheat. The result was that wheat production expanded rapidly in Minnesota, and North Dakota, and South Dakota; and Minneapolis soon became the leading flour milling center of the country.

THE contribution of the technologist to the dairy industry has been to increase the number of palatable food products which may be made from milk, insure maintenance of high quality and freedom from impurities during the entire period of processing and handling between the producer and the consumer, and—recently—to develop new fields of nonfood use for certain dairy products.

Artificial refrigeration has been of special importance to the dairy farmer because without it relatively little ice cream would be produced, nor could fresh milk be easily and safely supplied to the great majority of urban consumers. The application of the general principles of pasteurization in handling milk was an important development in dairy processing technique because it provided a means of insuring products free from bacteria harmful to human health. Prior to its introduction there was great risk of disease epidemics originating from the fluid milk generally sold in towns and cities.

The discovery of methods for making condensed and evaporated milk and dry milk powder was of great

significance to dairymen because it created new outlets for their products and strengthened the demand during the flush periods of production. Another very important development has been in the production of processed cheese. By various methods of blending, many different kinds and varieties of cheese have been made available to the consuming public, thus tending to stimulate the demand for the product and increasing its consumption.

ONE of the most important recent developments in food preservation is quick-freezing, a process whereby extremely perishable products are subjected to a very low temperature in such a way as to freeze them without destroying the cellular structure, as happens when ordinary freezing methods are used. Quick-freezing, still in its initial stages, is being used mostly in the marketing of fish and those fruits and vegetables that deteriorate rapidly in quality soon after harvest. This includes the various berries of soft tissue, cherries, peaches, certain fruit juices, green peas, lima beans, asparagus, and sweet corn.

In the present stage of the quick-freezing industry, much of its output is taken by the hotel and restaurant trade and by concerns manufacturing other products, such as ice cream and bakery goods. Sales to consumers through retail stores are increasing, however, and as the products become better known and more readily available they probably will come in much greater demand. The net effect of this method of processing may be to cause some relocation of production areas and to eliminate wide seasonal fluctuations in supplies for consumers.

THE increased mechanization of food processing and the shift to largescale factory production have been accompanied by an increasing tendency to package the output at the plants in consumer-size units and to discontinue the practice of selling in bulk and leaving to distributors the responsibility of doing any packaging or sorting. Taking over the packaging function caused processors to give increased attention to package improvement, including the use of more expensive package materials, because the package or container used serves not only to protect their product until it is delivered to the final purchaser but is also a means of identifying it with distinctive brands and trade marks. From the consumers' standpoint the package serves not only as a protection for the product but also as a convenience in such handling and storage as may be necessary before the product is finally consumed.

Whether or not the practice of selling more goods in package and in smaller units and of using more expensive package materials has contributed greatly to the widening of the price spread between the farmer and the consumer is difficult to determine. The added costs resulting from more packaging at processing plants and selling in smaller units may be offset to some extent by the savings that result from a reduction in the number of weighing and packaging operations in retail stores and the elimination of the waste that occurs when products are handled in bulk.

ALONG with the technological changes in food manufacturing have come changes in its economic organization. There has been a steady transition toward large-scale organization, as in other parts of our national economy. All branches of the food industry have shown this trend. National concerns operate in the fields of meat packing, dairy manufacturing and distribution, biscuit making, and fruit and vegetable canning. The most rapid rate of corporate expansion in the food industries came during the twenties; developments since that time have not been so striking. But the tendency is still in evidence, and appears likely to continue.

It is evident that all of these developments are of the utmost consequences to farmers and consumers. They affect the variety and palatability of the national diet, the localization of agricultural production, the spread between the prices farmers receive and those consumers pay, and the competitive relationships within the food industries. In this age of specialization, machines and division of labor have made mass production possible and brought many changes in the amounts and kinds of services provided by the marketing system which bridges the gap between the farmer and the consumer. In general the trend has been for more and more service for each and especially for the consumer. But as services have increased and more products have been provided, the costs of distribution have tended to rise. These increased costs, however, to a large extent reflect the general rise in wage rates which accompanied the industrial expansion in the first three decades of this century and which made possible better living standards for the great mass of consumers.

C. A. Burmeister.
A. C. Hoffman.

Income of Typical Tobacco Farms

IN southern Virginia there is a large number of farm families who for generations have depended very largely on tobacco production for their living and financial progress. This group is made up of producers of two types of tobacco, flue-cured and fire-cured, depending largely upon type of tobacco soil available. The financial success of families in these two groups is measured for 31 years in the accompanying charts. Net farm incomes of typical producers of flue-cured tobacco in Virginia have generally been well above the farm incomes of typical producers of fire-cured tobacco during the past 31 years.

Owing to an especially favorable demand for tobacco during World War I, the index of net farm income of producers of flue-cured tobacco rose to a high of 565 percent of 1910–14. The index for producers of fire-cured tobacco rose to 363 in the same period. Both indices declined after the war, but the index for producers of flue-cured tobacco remained considerably above 100 until 1930, while the index of farm income for producers of fire-cured tobacco immediately fell to 91 in 1920, and was below 100 during 4 of the next 10 years.

Except for 1940 the index of net farm income for typical producers of fire-cured tobacco during the past 11 years has been considerably below 100 percent of 1910–14. In contrast to this the index for typical producers of flue-cured tobacco has been considerably above 100 during all but 3 of the past 26 years. The index of farm income for the latter group has averaged 210 since 1933.

THESE shifts in income are the combined result of changes in foreign and domestic demand for tobacco, prices of tobacco, and changes in farm organization made by farmers to meet changes in demand and prices. Tobacco receipts including government payments make up about 75 percent and 85 percent respectively of the gross income on fire-cured and flue-cured tobacco farms. Any change in the markets for this one crop materially affects the income and operations of tobacco farmers.

Flue-cured tobacco is one of the principal types of tobacco used in the manufacture of cigarettes. During World War I, vastly increased cigarette consumption stimulated the demand for this type of tobacco. The price

received by Virginia producers rose from 10.7 cents per pound in 1910 to 48.8 cents per pound in 1919. The total acreage of this tobacco produced by Virginia farmers rose from approximately 100,000 acres in 1910 to 152,000 acres in 1919 and to 169,000 acres in 1920. The average total acreage of 114,000 in 1937–39 was 111 percent of the acreage in 1910–14.

In contrast to this, the total acreage of fire-cured tobacco was at a peak of 80,000 in 1910. The acreage declined sharply to 50,000 in 1914, then increased to 70,000 acres in 1918. Since 1918 the acreage has steadily declined, and in 1937–39, at 23,000 acres, it was only 34 percent of the acreage in 1910–14.

THE export market has been more favorable to producers of flue-cured tobacco than to producers of fire-cured tobacco. Exports of flue-cured tobacco in 1937–39 were 120 percent of the exports in 1923–26. Exports of fire-cured tobacco in 1937–39 were only 31 percent of what they were in 1923–26.

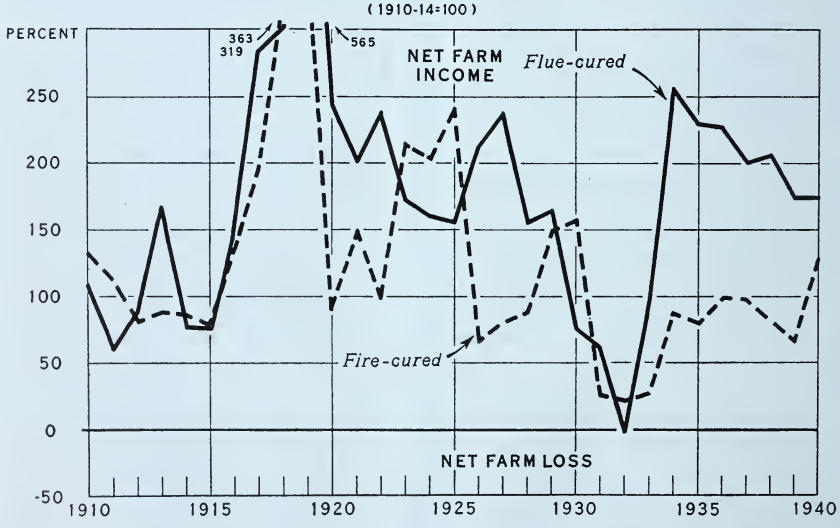
Fire-cured tobacco (used largely for snuff and Italian type cigars, chewing, and nicotine) has been largely an export crop; for example, in the middle 20's well over half of the Virginia fire-cured crop was exported. Exports and production have been steadily declining for years.

Unfavorable markets and resulting lower prices have caused some producers of fire-cured tobacco to abandon the enterprise. Some who formerly produced fire-cured tobacco have no tobacco today, but others whose farms have suitable soils have shifted to the production of flue-cured.

The typical producer of Virginia fire-cured tobacco has gradually reduced his acreage of tobacco and now has one-third less acreage than in 1910–14 or 1928–32. He is getting about 20 percent higher yields than in 1928–32 and is producing about 87 percent as much tobacco.

The typical producer of flue-cured tobacco has decreased his acreage of tobacco only 10 percent from the 1910–14 or 1928–32 average; and yet his yields are 37 percent greater and

INDICES OF NET FARM INCOME OF TYPICAL TOBACCO FARMS, VIRGINIA, 1910-40



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his production approximately 20 percent greater than in either 1910–14 or 1928–32. The total amount of fertilizer used on both types of farms has remained about the same; however, it has been applied to smaller acreages.

Organization of Typical Tobacco Farms, 1937–39

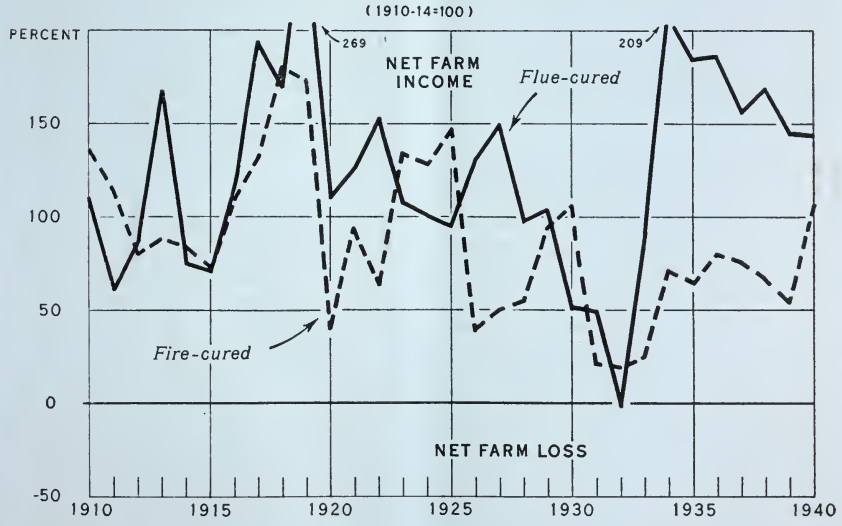
Item	Type of farm	
	Fire-cured (type 31)	Flue-cured (type 11)
Acres in farm	118.1	133.6
Acres cultivated	44.5	48.2
Percentage of farm cultivated	37.7	36.1
Acres tobacco	5.1	7.3
Yield of tobacco, pounds per acre	803	737
Acres corn	9.0	10.8
Acres other grains	8.9	6.8
Acres hay	7.0	7.0
Acres rotation pasture	9.0	6.3
Acres permanent pasture and woods	67.1	79.4
Workstock, head	1.8	2.0
Cattle, head	3.8	3.2
Hogs, head	2.5	2.1
Hens, number	38.6	36.0
PROPORTION OF GROSS INCOME FROM VARIOUS SOURCES	*Percent*	*Percent*
Tobacco	57.5	81.4
Other crops	13.1	5.3
Livestock	13.9	7.9
Other	15.5	5.4
Total	100.0	100.0

THERE is little difference in the size of farm of the typical producer of fire-cured or flue-cured tobacco. (See accompanying table.) Practically no change in size of farm has occurred since 1910. However, producers of fire-cured tobacco, because of a declining market and lower tobacco prices, have increased production of feed crops and livestock. Producers of flue-cured tobacco have kept their crop and livestock organization about unchanged.

The purchasing power of net farm income has been considerably lower for fire-cured than for flue-cured producers. For the former the index has been below 100 in 20 out of the last 31 years; since 1926 it has averaged only 62 and has reached 100 in only 2 years (1930 and 1940). In contrast, the index of purchasing power of producers of flue-cured tobacco has been below 100 in only 10 years during the past 31 and since 1926 has averaged 124.

WYLIE D. GOODSELL.

INDICES OF PURCHASING POWER OF NET FARM INCOME OF TYPICAL TOBACCO FARMS, VIRGINIA, 1910-40



U. S. DEPARTMENT OF AGRICULTURE NEG. 39365 BUREAU OF AGRICULTURAL ECONOMICS

New Products for Old Crops

AS the need for planned agricultural production grows more evident day by day the role of plant research becomes clearer. Discoveries of the past have cut costs of production and improved the quality of almost everything we eat. Research also promotes stabilized production, which is vital to planned production. The best laid plans may fall far short of the mark if a crop such as wheat, for instance, is ravaged by a widespread epidemic of rust. In recent years yields of spring wheat have fluctuated rather widely because of rust.

Plant breeders have worked for years to overcome the disastrous effects of wheat rust. A succession of improved varieties has been the result. The most successful so far is Thatcher, a spring wheat developed cooperatively by the Minnesota Agricultural Experiment Station and the Bureau of Plant Industry. Because Thatcher demonstrated its superior rust resistance in 1935 and 1937—when rust damaged other varieties—it is now planted widely. In 1940, when weather was again favorable for rust in certain areas it undoubtedly prevented serious losses.

RIGHT now corn is in the news, because it is the key to expanding livestock production. The recent action of the Department in encouraging greater corn production this year calls attention to the tremendous advances made by State and Federal plant breeders in the development of hybrid corn. Because it produces from 15 to 20 percent greater yields than open-pollinated varieties, hybrid corn requires fewer acres, less labor, and less capital investment to produce our national requirements. It is also more tolerant to certain diseases and insect pests. It withstands more unfavorable climatic conditions and other natural hazards, with the result that farmers who grow it are more certain of a crop. Approximately 80 percent of the corn acreage of Iowa and Illinois was planted to hybrids in 1940.

In the field of fruits and vegetables recent work by the Bureau has developed new and superior varieties of apples, peaches, pears, strawberries, blueberries, potatoes, beans, cabbage, and tomatoes. The new Pan-America tomato is of special interest now because it combines the excellent quality of our own Marglobe with unusual resistance to wilt, inherited from its South American ancestor, a wild Peruvian relative of the tomato. One of the new potatoes combines disease resistance and insect resistance, with the promise of large savings to growers because of the reduced number of sprays necessary.

Plant breeders of the past have been so hard pressed by threatening diseases and other natural hazards that they have not had much time to speculate on the food value of their creations. Of course they have kept in mind such objectives as appearance, taste and keeping quality. But the more subtle values that influence nutrition have not, until recently, received special attention.

THE present interest in nutrition, greatly stimulated by the national defense program, finds science several jumps ahead of the general public. In November 1939, the Department of Agriculture announced a new Bankhead-Jones research project designed to discover ways of increasing the nutritional value of foodstuffs produced on farms in the United States. The technical phases of the work are centered at Cornell University where a special laboratory has been erected,

but the objectives are Nation-wide, and the studies will cover the entire country. The object is to discover the relationships between soils and plants, and animal and human nutrition. Already the physical plant is in operation and several studies are in progress.

We already have a number of interesting clues in this field and our State and Federal research men are reporting new ones every few weeks. Orange trees in Florida announce a deficiency of magnesium in the soil by a characteristic mottling of their leaves, known as "Frenching." Oranges from such trees are low in vitamin C. As soon as the magnesium deficiency is corrected the vitamin content of the fruit becomes normal. Our plant breeders report that some of the new strains of sweetpotatoes have more than the usual quantity of vitamin A; some of their new cabbages are high in vitamin C.

THERE are other facts about plants that present a challenge to our research men. We know that plants in some areas develop abnormally because of certain mineral deficiencies in the soil. We know also that livestock fed entirely on plants grown in these areas suffer from the same deficiencies. There is every reason to believe that the same is true with people. Some varieties of a plant furnish more of a valuable nutritive element than other varieties of the same plant. Again, a plant harvested at one stage of development will be richer in certain nutrients than if it were harvested at another stage. But what about the effect of climate, cultural practices, intensity of sunlight, methods of harvesting, handling and storage? The Bureau of Plant Industry is out to find the answers to these questions in terms of human nutrition.

ERNEST G. MOORE,
Bureau of Plant Industry.

United States: Exports and Imports of Specified Agricultural Commodities, September–May 1939–40 and 1940–41 and May 1940 and 1941 [1]

Commodities	Unit	September–May		May	
		1939–40	1940–41	1940	1941
Exports:					
Pork:		*Thousands*	*Thousands*	*Thousands*	*Thousands*
Cured pork [2]	Lb	42,381	9,913	1,495	1,026
Other pork [3]	Lb	67,780	17,791	2,280	2,491
Total pork	Lb	110,161	27,704	3,775	3,517
Lard, including neutral	Lb	195,921	128,582	14,889	10,697
Wheat, including flour	Bu	36,234	31,284	2,239	4,572
Apples, fresh [4]	Bu	2,796	738	79	46
Pears, fresh	Lb	64,455	14,725	427	152
Tobacco, leaf	Lb	254,377	122,070	30,087	22,427
Cotton, excluding linters (500 lb.)	Bale	5,996	963	224	77
Imports:					
Cattle	No	505	584	87	72
Beef, canned, including corned	Lb	62,494	48,431	9,080	9,343
Hides and skins [5]	Lb	241,803	359,463	23,662	55,778
Barley malt	Lb	49,416	28,604	4,327	4,119
Sugar, cane (2,000 lb.)	Ton	2,371	2,620	301	421
Flaxseed	Bu	10,056	9,043	1,434	1,177
Tobacco, leaf	Lb	46,393	48,966	5,858	5,625
Wool, excl. free in bond for use in carpets, etc	Lb	139,678	391,994	10,222	57,241

[1] Corrected to July 17, 1941.
[2] Includes bacon, hams, shoulders, and sides.
[3] Includes fresh, pickled or salted, and canned pork.
[4] Includes baskets, boxes, and barrels in terms of bushels.
[5] Excludes the weight of "other hides and skins" which are reported in pieces only.

Office of Foreign Agricultural Relations. Compiled from official records, Bureau of Foreign and Domestic Commerce.

Year and month	Industrial production (1935–39=100) [1]	Income of industrial workers (1924–29=100) [2]	Cost of living (1924–29=100) [3]	(1910–14=100) Wholesale prices of all commodities [4]	Prices paid by farmers for commodities used in [5] Living	Production	Living and production	Farm wages	Taxes [6]
1925	91	98	101	151	164	147	157	176	270
1926	96	102	102	146	162	146	155	179	271
1927	95	100	100	139	159	145	153	179	277
1928	99	100	99	141	160	148	155	179	279
1929	110	107	99	139	158	147	153	180	281
1930	91	88	96	126	148	140	145	167	277
1931	75	67	88	107	126	122	124	130	253
1932	58	46	79	95	108	107	107	96	219
1933	69	48	75	96	109	108	109	85	187
1934	75	61	77	109	122	125	123	95	178
1935	87	69	79	117	124	126	125	103	180
1936	103	80	80	118	122	126	124	111	182
1937	113	94	83	126	128	135	130	126	187
1938	88	73	81	115	122	124	122	125	186
1939	108	84	80	113	120	122	121	123	190
1940	122	95	81	115	121	124	123	126	
1940—July	121	93	81	113			122	129	
August	121	96	81	113			122		
September	125	99	81	114	121	123	122		
October	129	101	81	115			122	129	
November	133	104	81	116			122		
December	139	108	81	117	122	125	123		
1941—January	140	111	81	118			123	124	
February	141	111	81	118			123		
March	143	113	82	119	124	125	124		
April	140	113	82	121			124	138	
May	150	125	83	124			125		
June	156	133	84	127			126		
July [7]	162			129				160	

Year and month	Index of prices received by farmers (August 1909–July 1914=100) Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chickens and eggs	All groups	Ratio of prices received to prices paid
1925	157	177	172	153	140	153	163	156	99
1926	131	122	138	143	147	152	159	145	94
1927	128	128	144	121	140	155	144	139	91
1928	130	152	176	159	151	158	153	149	96
1929	120	144	141	149	156	157	162	146	95
1930	100	102	162	140	133	137	129	126	87
1931	63	63	98	117	92	108	100	87	70
1932	44	47	82	102	63	83	82	65	61
1933	62	64	74	105	60	82	75	70	64
1934	93	99	100	103	68	95	89	90	73
1935	103	101	91	125	118	108	117	108	86
1936	108	100	100	111	121	119	115	114	92
1937	126	95	122	123	132	124	111	121	93
1938	74	70	73	101	114	109	108	95	78
1939	72	73	77	105	110	104	94	93	77
1940	85	81	79	114	108	113	96	98	80
1940—July	78	80	89	98	110	105	88	95	78
August	76	77	79	107	110	109	90	96	79
September	77	76	73	114	114	111	104	97	80
October	80	78	79	99	112	116	112	99	81
November	83	79	71	98	112	121	120	99	81
December	81	79	75	93	111	128	122	101	82
1941—January	84	80	78	117	130	121	100	104	85
February	81	80	80	156	130	118	90	103	84
March	84	82	83	134	129	118	90	103	83
April	90	88	89	161	137	121	104	110	89
May	93	98	89	146	138	124	107	112	90
June	96	107	97	146	144	126	118	118	94
July	98	121	93	130	154	132	127	125	97

[1] Federal Reserve Board, adjusted for seasonal variation.
[2] Adjusted for seasonal variation. Revised April 1941.
[3] Monthly indexes for months not reported by the Bureau of Labor Statistics are interpolated by use of the National Industrial Conference Board cost-of-living reports.
[4] Bureau of Labor Statistics index with 1926=100, divided by its 1910–14 average of 68.5.
[5] These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.
[6] Index of farm real estate taxes per acre. Base period represents taxes levied in the calendar years 1909–13, payable mostly within the period Aug. 1, 1909–July 31, 1914.
[7] Preliminary.

NOTE.—The index numbers of industrial production and of industrial workers' income shown above are not comparable in several respects. The base periods are different. The production index includes only mining and manufacturing; the income index also includes transportation. The production index is based on volume only, whereas the income index is affected by wage rates as well as by time worked. There is usually a time lag between changes in volume of production and workers' income, since output can be increased or decreased to some extent without much change in the number of workers.

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